

## ABSTRACT

A back up storage device (20) that backs up non-compressed data during a backup window period and then later after the backup window period is over and the device (20) is idle, it retrieves, compresses and then re-stores the data to reclaim space on the storage medium of the device (20). During operation, a duty cycle having a backup window period and an idle period is defined. When the back up window starts, data is down-loaded and stored on the device (20) in non-compressed form. When the idle period begins, the non-compressed data is retrieved, compressed and then re-stored on the device (20) to reclaim space on the storage medium of the device (20). In one embodiment of the invention, the back up storage device (20) is an emulated tape drive (20) that uses a software compression algorithm to compress the data stored in the device (20).

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